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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,388	01/24/2002	Yoshihiro Katsu	JP920010010US1	3893

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EXAMINER	
DI GRAZIO, JEANNE A	
ART UNIT	**PAPER NUMBER**
2871	

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/056,388	KATSU ET AL.	
	Examiner	Art Unit	
	Jeanne A. Di Grazio	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims

Claims 1-20 are pending. No claims have been amended per Response of 2 February 2005.

Priority

Priority to Japanese Patent Application No. 2001-024758 (Jan. 31, 2001) is claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3, 5, 6, and 9-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takase et al. (US 5,276,600) in view of Zhao et al. (US 6,382,816 B1).

As to claims 1 and 13, Takase discloses a curved reflector having a flexible substrate. The reflector according to the Takase invention can be used as a reflecting plate (lamp housing) for a fluorescent lamp in turn incorporated into a backlight source of a liquid crystal display panel (Col. 1, Lines 11-16).

Turning to Figure 1, Takase teaches a reflector (1a) that is curved for receiving a lamp, and a reflecting film (4) formed on the inner curvature of the reflector.

Takase teaches that a transparent protective layer (light transmission region) can be formed on the side opposite to the light reflection layer:

"In the reflector of this invention, the substrate can be provided with a transparent protective layer on the side opposite to the high reflection layer. By such a protective layer, the effects of external environmental factors on the surface hardness, light resistance, gas resistance and waterproofness of the reflector can be reduced further. Examples of materials usable for the formation of such a protective layer include organic materials, e.g., acrylic resins such as polymethyl methacrylate, polyacrylonitrile resin, polymethacrylonitrile resin, silicone resins such as a polymer available from ethyl silicate, polyester resins and fluorinated resins; and inorganic materials such as silicon oxide, zinc oxide and titanium oxide. In particular, lamination of a material capable of shielding light of wavelengths not longer than 400 nm, preferably 380 nm to 10% or less is preferred for the prevention of light deterioration (ultraviolet deterioration) of the silver-containing layer, which prevention is one of objects of this invention. The transparent protective layer is required to have such a thickness that it can exhibit protective effects without lowering the light reflecting ability and impairing the flexibility. The thickness may vary as needed

depending on the material and application purpose." (Col. 4, Lines 63-68; Col. 5, Lines 1-21).

Takase furthermore instructs that the substrate film thickness should be at least 5 micrometers, the silver reflective layer is in the range of Angstroms, and the adhesive layer can range from thicknesses of 1-20 micrometers (preferred)(Col. 4.).

Takase does not appear to explicitly specify a thickness of the light transmission region or transparent protective layer.

Zhao teaches and discloses a protective coating for an energy efficient lamp (title, entire patent) and teaches that a protective layer that protects a layer of silver inside of a lamp housing, preferably has:

"[T]he protective layer of silica, or other oxide, preferably has a thickness of between about 0.05 and about 0.4 micrometers, most preferably, around 0.05-0.14 micrometers. This is thick enough to protect the silver against oxidation during formation of the lamp and against subsequent degradation by atmospheric sulfides." (Col. 6, Lines 24-30).

Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to modify Takase in view of Zhao for the purpose of protecting the reflective layer against oxidation during formation of the lamp and against subsequent degradation by atmospheric sulfides.

As to claims 3 (amended) 10, 12, 14, Zhao teaches and discloses a preferred range of protective layer thicknesses (Column 6, Lines 24-30).

As to claims 5, 11, 15 Takase teaches a base (= sheet-shaped support body) of a given rigidity (Figures 3 and 5).

As to claims 6 and 9, Takase teaches a transparent protective layer as noted.

As to claims 16-19, Takase teaches and discloses materials for use as the protective layer and reflector as noted.

Claims 2, 4, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takase et al. (US 5,276,600) in view of Zhao et al. (US 6,382,816 B1) and further in view of Deloy (US 6,336,728 B1).

As to claims 2 and 7, Takase discloses a curved reflector having a flexible substrate. The reflector according to the Takase invention can be used as a reflecting plate (lamp housing) for a fluorescent lamp in turn incorporated into a backlight source of a liquid crystal display panel (Col. 1, Lines 11-16).

Turning to Figure 1, Takase teaches a reflector (1a) that is curved for receiving a lamp, and a reflecting film (4) formed on the inner curvature of the reflector.

Takase teaches that a transparent protective layer (light transmission region) can be formed on the side opposite to the light reflection layer:

"In the reflector of this invention, the substrate can be provided with a transparent protective layer on the side opposite to the high reflection layer. By such a protective layer, the effects of external environmental factors on the surface hardness, light resistance, gas resistance and waterproofness of the reflector can be reduced further. Examples of materials usable for the formation of such a protective layer include organic materials, e.g., acrylic resins such as polymethyl methacrylate, polyacrylonitrile resin, polymethacrylonitrile resin, silicone resins such as a polymer available from ethyl silicate, polyester resins and fluorinated resins; and inorganic materials such as silicon oxide, zinc oxide and titanium oxide. In particular, lamination of a material capable of shielding light of wavelengths not longer than 400 nm, preferably 380 nm to 10% or less is preferred for the prevention of light deterioration (ultraviolet

deterioration) of the silver-containing layer, which prevention is one of objects of this invention. The transparent protective layer is required to have such a thickness that it can exhibit protective effects without lowering the light reflecting ability and impairing the flexibility. The thickness may vary as needed depending on the material and application purpose." (Col. 4, Lines 63-68; Col. 5, Lines 1-21).

Takase furthermore instructs that the substrate film thickness should be at least 5 micrometers, the silver reflective layer is in the range of Angstroms, and the adhesive layer can range from thicknesses of 1-20 micrometers (preferred)(Col. 4.).

Takase does not appear to explicitly specify a thickness of the light transmission region or transparent protective layer.

Zhao teaches and discloses a protective coating for an energy efficient lamp (title, entire patent) and teaches that a protective layer that protects a layer of silver inside of a lamp housing, preferably has:

"[T]he protective layer of silica, or other oxide, preferably has a thickness of between about 0.05 and about 0.4 micrometers, most preferably, around 0.05-0.14 micrometers. This is thick enough to protect the silver against oxidation during formation of the lamp and against subsequent degradation by atmospheric sulfides." (Col. 6, Lines 24-30).

Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to modify Takase in view of Zhao for the purpose of protecting the reflective layer against oxidation during formation of the lamp and against subsequent degradation by atmospheric sulfides.

Takase does not appear to explicitly specify a lamp reflector with arm portions disposed along an emitting surface and back surface and light transmission regions of a specified thickness.

Deloy teaches a flat panel display guide that has leg sections. The leg portions, in part, allow for enhanced luminance uniformity and the reduction of dead space (Col. 4, Lines 22-25).

Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to modify Takase in view of Deloy for enhanced luminance uniformity and the reduction of dead space.

As to claim 4 and 8, Zhao teaches and discloses teaches a preferred range of protective layer thicknesses (Column 6, Lines 24-30).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takase et al. (US 5,276,600) in view of Zhao et al. (US 6,382,816 B1) and further in view of Simpson (US 6,399, 228 B1).

As to claim 20, Takase does not appear to explicitly specify the material of the reflection layer.

Simpson teaches and discloses a reflector of Ag, Al, and Pt (Col. 9, Lines 6-10 and ABS) for high reflectivity (Id.).

Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to modify Takase in view of Simpson for a highly reflective reflector.

Response to Arguments

Applicant's arguments filed February 2, 2005 have been fully considered but they are not persuasive.

The Examiner has carefully considered the Applicant's arguments but respectfully disagrees.

Applicant's Only Arguments:

Applicant argues the following:

(1) "Takase et al. fails to teach or suggest the presence of a light transmission region defined between an arm portion of the light reflector and the light guide plate. " (Remarks at page 6).

(2) "Zhao et al. fails to teach or suggest, among other things, a light transmission region defined between an arm portion of the light reflector and a light guide plate. Therefore, there is no motivation or suggestion in Takase et al. and Zhao et al. to combine these teachings to arrive at the present invention." (Remarks at page 7).

(3) " ... the leg portions of Deloy are not equivalent to the arm portions of the present invention." (Remarks at page 8).

Examiner's Responses to Applicant's Only Arguments:

The Examiner responds in turn:

(1) Applicant acknowledges in Applicant's Remarks that the light transmission region may comprise a transparent protective layer. (Remarks at page 6).

As noted, in the Office Action, Takase teaches that a transparent protective layer (light transmission region) can be formed on the side opposite to the light reflection layer. See Rejection above.

Therefore, Takase, based on Applicant's own admission, does in fact teach a light transmission region.

(2) Zhao is not offered to teach the light transmission region. Zhao is offered to show a preferred thickness for a transparent protective layer as noted in the Office Action.

Zhao teaches and discloses a protective coating for an energy efficient lamp (title, entire patent) and teaches that a protective layer that protects a layer of silver inside of a lamp housing, preferably has:

"[T]he protective layer of silica, or other oxide, preferably has a thickness of between about 0.05 and about 0.4 micrometers, most preferably, around 0.05-0.14 micrometers. This is thick enough to protect the silver against oxidation during formation of the lamp and against subsequent degradation by atmospheric sulfides." (Col. 6, Lines 24-30).

Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to modify Takase in view of Zhao for the purpose of

protecting the reflective layer against oxidation during formation of the lamp and against subsequent degradation by atmospheric sulfides.

The motivation to combine references is deemed proper.

(3) Deloy instructs that "the light guide both reduces loss of light due to absorption by adjacent **lamp legs**, and enhances luminance uniformity by redistributing light such that 'dead spaces' are illuminated." (Column 4, Lines 22-25).

The leg portions are on the lamp and not the guide, contrary to Applicant's arguments (Remarks page 7).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (571)272-2289. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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JDG

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